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### **Telogen effluvium**

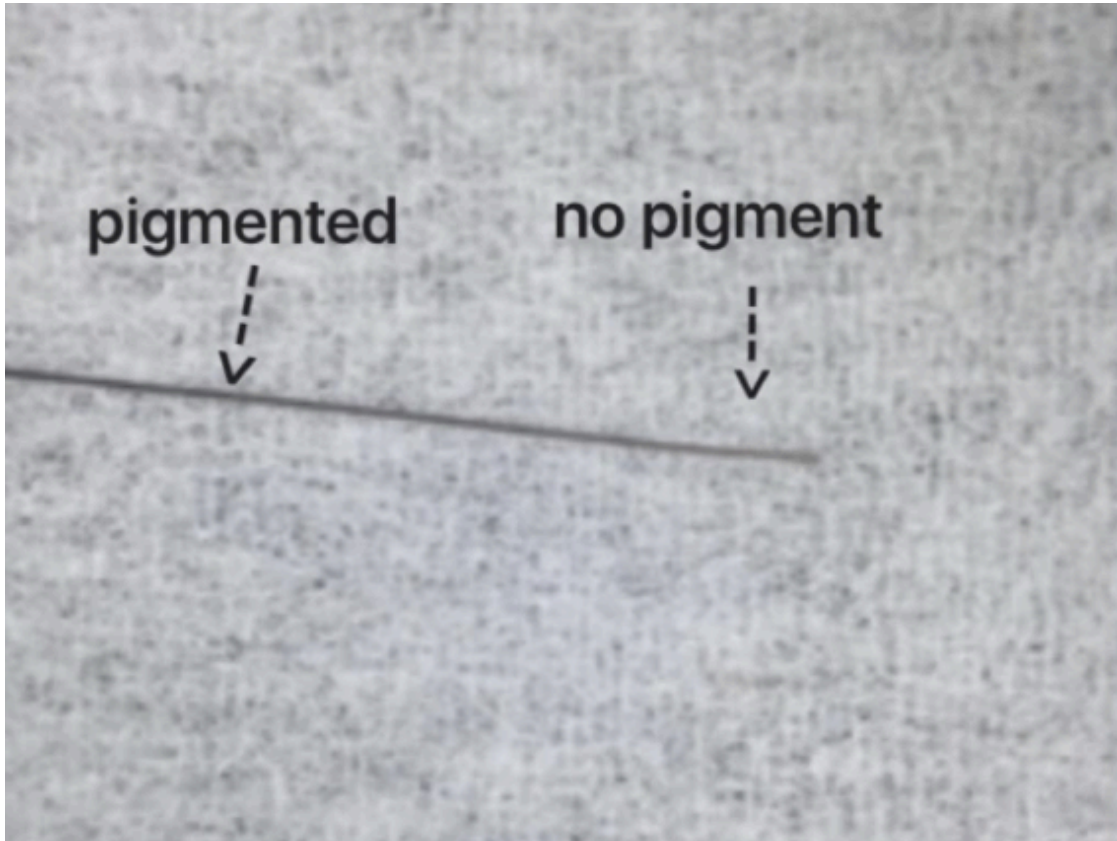
Telogen effluvium refers to increased daily shedding, It's normal to lose 50-100 hairs per day. When this number is exceeded, a clinical may consider the diagnosis of telogen effluvium . The most common causes of telogen effluvium include

- low iron
- thyroid abnormalities
- crash diets
- weight loss
- starting and stopping birth control
- medications
- high stress
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Telogen effluvium that goes on many months without obvious cause is referred to as chronic telogen effluvium. See our handout on chronic telogen effluvium to learn more about this distinct condition.

# Dr. Donovan – ARTICLES ON TELOGEN EFFLUVIUM

## ARTICLE 1: HOW CAN ONE IDENTIFY A TELOGEN HAIR?



Hairs that are shed from the scalp are known as telogen hairs. These hairs lack pigment at the very end and do not have a root sheath around the ends either. Telogen hairs are known as "club hairs." I always encourage my patients to bring in hairs they shed if they are worried about the type of hair they are seeing. 99.9 % of the time the hairs they see are telogen hairs. About 30-70 telogen hairs are released from the scalp each day. In some hair loss conditions (such as telogen effluvium), an increased number of telogen hairs are released every day

## **ARTICLE 2: Does normal hair shedding occur in an even distribution?**

I'm often asked if hair shedding under normal circumstances occurs equally all over the scalp. In other words, if a person's daily shedding is 60 hairs, do 30 come from the front and 30 from the back?

### **Normal hair shedding**

Normal hair shedding does occur equally. Hairs on the scalp grow independent of each other and so shedding occurs independent of other hairs too. If 60 hairs is a person's rate of daily shedding, then 30 would come from the front half and 30 from the back.

### **Shedding in hair disorders**

If a person has a hair disorder (hair loss condition), the shedding may or may not be equally distributed. If the person has androgenetic alopecia (male balding and female thinning), then the shedding occurs much more in the area of thinning at the front. For example, in androgenetic alopecia the rate of shedding is slightly increased and perhaps 60 hairs would be shed in the front and 30 hairs in the back half of the scalp. If the person has telogen effluvium, the shedding is equally distributed all over the scalp - but at higher rates than normal. For example, patients with telogen effluvium might experience loss of 60 hairs in the front and 60 hairs in the back. In telogen effluvium, this could even be 200 in the front and 200 in the back but the key point is that the shedding is always equal. If the individual has alopecia areata as the reason for their hair loss, shedding may not be equal. Shedding could be as high as 300 in a small section of the scalp and just 30 in another area.

### **Conclusion**

In general, in the absence of any hair loss condition, the shedding is the same all over the scalp.

## ARTICLE 3: DOES TRAVEL TRIGGER HAIR LOSS?

Does long distance travelling trigger hair loss? Well, usually not. The one exception would be travel from low daylight to high daylight environments (a traditional "winter break" to a sunny destination). A mild increase in daily shedding is noticed several weeks later.

## ARTICLE 4: MEASURING HAIR LENGTHS IN A WASH TEST

What does it mean?



It is normal to lose 50-75 hairs per day and even more on days when the hair is washed. An increase in hair shedding is seen in both the early stages of androgenetic alopecia (AGA) as well as in hair shedding disorders such as telogen effluvium (TE). Measurements of the length of hairs that are shed can provide valuable insights into whether the patient has a TE or AGA ... or both.

The shedding of a large proportion (much greater than 10 %) of hairs less than 3 cm in length is characteristic of AGA. In TE, the overall number of hairs shed is higher but hairs are typically longer (greater than 5 cm). Shedding of short hairs is not common in TE.

**Reference**

Non-invasive method distinguishes chronic telogen effluvium from mild female pattern hair loss: clinicopathological correlation.

Bittencourt C, et al. *Int J Dermatol*. 2016.

Assessing the reliability of the Modified Wash Test.

Guarrera M, et al. *G Ital Dermatol Venereol*. 2011.

## ARTICLE 5: VITAMIN D AND HAIR LOSS: IS REPLACING A LOW VITAMIN D GOING TO HELP?

### **Vitamin D is important but not the whole story (unfortunately)**

Vitamin D clearly has a role in normal hair growth. But does supplementing vitamin D (in those with low levels) cause it to come back? No. I have never ever witnessed convincing evidence of such a direct link. It is absolutely true that low vitamin D is associated with some types of hair loss. This includes AGA (in some studies only) and alopecia areata.

### **Vitamin D supplementation does not promote hair growth for most**

I do not believe that supplementing vitamin D alone will promote hair growth for the vast majority of people with the story you have just shared. Do I believe supplementing D is a good idea when levels are low? Yes. It has other health benefits and may help various hair growth treatments work better. That too has yet to be proven.

I appreciate this is a tough concept and doesn't always make a great deal of sense at first. If low vitamin D has a role in hair growth and my levels are low... it would only make sense that supplementing would help! Not quite.

### **A simple analogy**

I often use a simple analogy. We all know that an engine is essential for a car to work. If you don't have an engine, you are not going to get too far. But consider the car that you see on an abandoned lot. It has problems with the engine sure. But there are problems with numerous aspects in the car. Replacing the engine is not going to allow you to drive the car off that lot. No matter how many engines you put in that car or how well engineered that engine is. Other things need to be addressed as well.

No one can argue that vitamin D is not important for hair. Babies who can't make vitamin D or who have problems with the Vitamin D receptor or signaling - have hair loss. So clearly it's important just like an engine in the car is important.

But giving back vitamin D to adults with hair loss or giving back a new engine to a car on an abandoned lot does not solve the main issue.

I always supplement vitamin D when low (and I would recommend fixing an engine on a car that does not work) but it is far too big of a jump to conclude that that alone is sufficient to grow hair (or get that car running again to drive off the lot).

## ARTICLE 6: Understanding Telogen effluvium (TE)

CATEGORY	EXAMPLE
S - Stress & Scalp Dz	<ul style="list-style-type: none"><li>• Physiologic stress of a surgery</li><li>• Severe psoriasis of scalp</li></ul>
E - Endocrine	<ul style="list-style-type: none"><li>• Hypothyroidism</li></ul>
N - Nutritional	<ul style="list-style-type: none"><li>• Low iron</li><li>• Crash diet</li></ul>
D - Drugs	<ul style="list-style-type: none"><li>• Beta blockers, lithium, SSRI's</li></ul>

TE is a form of hair loss whereby the affected individual experiences higher than normal levels of hair shedding day to day. For example, instead of losing 40, 50 or 90 hairs in a given day (i.e. what is considered normal shedding) individuals experiencing telogen effluvium lose well in excess of 100 hairs on any given day.

### Triggers of TE

Telogen effluvium occurs when some "trigger" causes hair follicles to leave the growing phase of the hair cycle and enter the resting phase. So, what exactly are the triggers that "send" a hair follicle out of the actively cycling (growing) phase and into the undesired shedding phase? I teach health professionals the easy to remember memory cue "SEND"

### COMMON TRIGGERS OF TE:

Stress  
Endocrine problems  
Nutritional issues  
Drugs



## ARTICLE 7: ANDROGENETIC ALOPECIA AND TELOGEN EFFLUVIUM: DUAL DIAGNOSES COMMON



Recognizing whether a patient has genetic hair loss or telogen effluvium ... or both .... often requires listening to the patient's story about their hair loss in addition to examining the scalp and looking at the blood test results. Many women have both.

### **Differentiating between AGA & TE**

AGA often shows hair loss in regions rather than all over although it can certainly be all over. AGA is fundamentally characterized by hair follicle "miniaturization." The hair follicles get skinnier - this is not a feature of TE. Telogen effluvium is characterized by diffuse loss and waves of regrowth. Empty tracts where a hair once was found and upright regrowing hairs characterize TE. Patients with TE often have a trigger such as low iron, thyroid problems, nutritional issues, crash diets, stress or medications that lead to the shedding. Shedding in TE is more pronounced than in AGA.

## ARTICLE 8: FERRITIN LEVELS: FRANTIC OR FACTUAL?

### **What are normal ferritin levels? What do they mean?**

Blood tests are associated with great confusion. In other blogs, I've discussed the [uselessness of DHT measurements for most patients](#), yet everyday patients show me results. A lot of confusion exists with TSH levels, T3, T4 measurements (all for thyroid). I'll comment on these soon too.

For now, let's discuss ferritin.

### **Iron levels are important but low iron should not cause immediate panic**

Many females have ferritin levels 20-40 without hair loss. That sentence needs to be repeated over and over. And then repeated again. It's far too simple to say that ferritin levels must be above 40 for healthy hair growth. We often "AIM" for that but it is completely wrong to say that anytime ferritin is less than 40 there is a problem. The correct answer is there may be

If you were to measure iron levels (i.e. the ferritin test) in all women between ages 20-40, you'd find many with ferritin 28, 32, 44. You'd find very few with ferritin levels above 50. You'd find a number with ferritin levels 6, 12, 19.

### **Misconceptions around iron levels.**

I think too often I hear women state that because their iron levels are under 40 (ie let's say 26) they **MUST** have a diagnosis of telogen effluvium. This is wrong. When I learn that a individual has an iron level of 26, I can only say they have an iron level of 26. They may have normal hair. They may have androgenetic alopecia (female pattern hair loss) and they may have a host of other conditions as well including alopecia areata and telogen effluvium. Low iron levels have been associated with many hair loss conditions.

The level of iron tells me very little.

## **Ferritin levels below 15**

Once the iron levels start going low enough, it is true that there is a high likelihood now that the patient will experience some hair loss as a result of those low iron levels. It's quite unusual for a patient to have normal hair growth with a ferritin of 2. In general, once ferritin levels drop below 15 AND the patient has hair loss concerns, it's no longer a debate as to whether to replace iron. It's a general consensus that supplementing iron is necessary.

## **Key 10 summary points about iron levels and hair loss**

Here's some key 'take home' messages about iron and hair loss

1. Aiming for a ferritin level above 40 is a good idea for anyone with hair loss.
2. Aiming for a ferritin above 70 is not my recommendation and is very hard to achieve and generally has little benefit for the hair.
3. If one's ferritin is between 20-40, it must always be remembered that the ferritin levels may be just fine for that person. I'd still recommend supplementing with iron tablets, but there is not a lot of good evidence
4. Ferritin levels under 15 are usually associated with changes in hair cycling. If ferritin is less than 15, I recommend speaking to one's physician about iron pills
5. If ferritin levels are low and hemoglobin levels are low (something we call an anemia), a full workup by a doctor should be booked.
6. Vitamin C helps iron absorption and taking a vitamin C rich source with iron pills is often helpful to increase iron.
7. Many females have ferritin levels 20-40 without hair loss. The ferritin level alone does not mean much without taking everything into perspective.
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## ARTICLE 9: BIOTIN AND HAIR LOSS



Biotin is a well-known and popular supplement for treating hair loss. Let's face it - the world loves biotin. However, true deficiencies in biotin are rare given the ability of bacteria in the gastrointestinal system to produce biotin. Nevertheless, many individuals and physicians turn to biotin in the search for treatment options.

Soleymani and colleagues from New York University School of Medicine set out to critically examine the evidence for biotin use for treating hair loss. Their findings point out that there are no randomized trials to support the use of biotin in treating hair loss and that the public's interest in biotin over the past decades is not supported by medical evidence.

There is really no evidence to support routine biotin supplementation for individual's with hair loss. Exceptions do exist, of course, and true biotin deficiency may be considered in individuals who are elderly, pregnant, using anticonvulsants or chronically using alcohol.

### Reference

Soleymani T et al. J Drugs Dermatol. 2017 May 1;16(5):496-500

## ARTICLE 10: STRESS AND HAIR LOSS: A CLOSER LOOK AT THE 5 D'S OF STRESS

### The 5 D's of stress

Death

Divorce

Debt

Diagnosis

Dismissal

#### Does stress cause hair loss?

A common question I'm asked is whether stress can actually cause hair loss. The answer is maybe. Typical day to day stress probably is not a big culprit. However, stresses that are high enough in magnitude can sometimes trigger increased hair shedding, especially stresses that fall into categories of what I call the "5 D's" :

1. death of a loved one
2. divorce and relationship problems
3. debt and financial problems
4. new diagnosis for the patient or a loved one
5. dismissal from a job.

## The Holmes and Rahe Scale

The 5 D's based on research from the late 1960s when two psychiatrists Dr Holmes and Dr Rahe conducted research into how stress and illness are linked. Based on their studies, they created the Holmes and Rahe scale. The scale ranks a variety of life events based on the stress they cause. As you guessed, the 5Ds are right at the top. Death of a spouse was given a rating of 100, death of a close family member 63, divorce a rating of 73, a diagnosis of illness at 53, dismissal from work at 47 and financial issues (mid 20s). Hair loss and the 5Ds When patients mention concerns about recent hair loss it is important to conduct a very thorough history which sometimes includes an assessment of stresses of the patient.

